

Grassroot Innovations in Healthcare

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This Point of View on 'Grassroot Innovations in Healthcare' draws in examples of how Mahindra Satyam, in association with healthcare agencies helped improve healthcare services, increased access and quality of healthcare. The experiences clearly demonstrate the success of information and communication technology in transforming healthcare delivery and services.

The past few decades have seen major advances in medical technology and science that have transformed the medical field, and the long-term implications of these transformations are apparent. However, millions of people across the world do not have a full measure of opportunity to obtain the optimum medical health. They are limited by cost and accessibility. Information Technology (IT), which has revolutionized the operating model, presents an opportunity for universal access to medical transformation at a very low cost. None of this is better exemplified than by grassroot innovations enabled by Mahindra Satyam in association with Indian healthcare agencies for improving healthcare services, increasing access and quality of healthcare. Recipient of many international awards, Mahindra Satyam enabled remote medical diagnostic and care or telemedicine for a captive population of nearly 3 million people, 24/7 mobile healthcare services that will impact nearly 80 million people and providing emergency care services that impact nearly 260 million people in 10 states in India.

Telemedicine: Enabling Remote Medical Diagnostics and Services

A few years ago, residents of some 200 villages in the rural areas of Andhra Pradesh, a state in southern India, would have been very lucky if they had a full-time medical practitioner available. Presently they just have to visit a rural clinic and by using probes and equipments conduct EKGs which is transferred to a specialty cardiology hospital located 600 miles away in Bangalore. Within 15 minutes, cardiologists from the specialty hospital provide analysis and treatment plans for the ailment.

Approximately 10,000 people have undergone these tests and virtual consultations so far in a span of 15 months. Working with an NGO, Mahindra Satyam provided the overall Tele-Health framework to build Tele-EKG solutions that linked nearly 50 rural health clinics to Cardiac Center of Excellence at the Bangalore-based hospital. The framework provided the software, hardware selection as well as implementation approach as a turnkey model. A Tele-EKG application package was installed with interfaces to Schiller EKG equipment. The solution has data processing hardware and software that are installed at patient and doctor locations, which interfaces to medical equipments. A centralized server is maintained for all the data processing the information and all local applications interface to this server, with all transactions adhering to healthcare standards. As soon as a user logs in the computer, the Tele-EKG application takes the information from Schiller EKG machine and transfers to the central server which is made available to the doctors located 600 miles away. In less than 15 minutes diagnostics and treatment plan is conveyed, both via mail and

Point of View

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(what). Most importantly the patient interacts real-time with the cardiologist via a large TV screen. The patient is extremely happy with this convenient remote consultation from the comfort of his village, thereby saving on time, cost and travel.

Though the rural telecom infrastructure needs to scale up, the program has nonetheless transformed remote healthcare services which will impact nearly 3 million lives. This is also achieved with a fraction of the cost than a traditional medical delivery model.

The Foundation was honored with the "Computerworld Honors 21st Century Achievement Award" under the category "non-profit organizations" for its project "Telemedicine Intervention" in June 2008 based on the solution deployed by Mahindra Satyam.

Mahindra Satyam along with its partners was also honored with the "Consumer Health World Award" for the Tele-ophthalmology program. This program is similar to the TeleEKG program, and provides real-time ophthalmic visualization via a slit lamp at the patient (in the village) end and interpretation and consultation by the doctor remotely at a distance of 450 miles. The Consumer Health World Awards recognize excellence and advancement in health promotion, plan and design connected care and medical travel.

Mobilecare services (also known as ambulance services): To Improve Access and Utilization of Healthcare Services

Health Management and Research Institute (HMRI) is an India-based non-profit organization that leverages state-of-the-art information, communication technologies supported by modern management practices to transform healthcare delivery especially in the rural areas. Today HMRI is one of the world's largest integrated digital health networks.

The organization aims to reach 80 million population of Andhra Pradesh (a state in southern India) through 24/7 dial-a-doctor service, 40,000 onsite workers and 475 mobile health units and eventually scaling up its services and creating a possibility of 1 billion virtual and physical service contacts.

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Mahindra Satyam worked with HMRI in developing IT-based services. Major solutions developed include IT infrastructure for call center operation, mobile van application to automate patient records and record real-time health-related data from patients, end-to-end solution for Disease Surveillance Program including data recording, data analysis, user interface and a web-based Hospital Management system with SOA capabilities accessible to network hospitals and across health units.

IT-enabled services have been widely distributed and scaled. The call center manages an average 50,000 calls daily i.e., approx. 1,500,000 calls monthly making it the world's largest health contact center. The Foundation has 475 mobile health units (also known as ambulance) and till date (* 12 November 2009) provided over 17,000 telemedicine consultations. This has dramatically increased the healthcare services especially to the disadvantaged sections of the society and citizens residing in rural

Point of View

places. With mobility and recording of patients' information, the integrated healthcare delivery model is way ahead in improving the healthcare standards of the society.

For its mission and services delivered, HMRI has been honored with multiple awards including the "Manthan South Asia 2008 Award" for best e-content for health services in October 2008. Manthan Award is a first of its kind initiative in India that recognizes the best practices in e-Content and Creativity.

104 Advice, the Health Helpline of HMRI, has been awarded the eHealth (eIndia) Award for 'Civil Society/Development Agency Initiative of the Year'. This award honours organizations demonstrating innovation, leadership, and excellence in providing Information and Communication Technologies (ICT) services for health care services and hospital management.

Emergency Health Services: Dial 108 on same lines as 911 in US

India-based Emergency Health Services organization, set up in 2005, with the objective to create an integrated institution providing ambulance facilities, trained paramedics, and access to free hospital care accessible through phone. Today the non-profit organization operates as one of the fastest, most comprehensive emergency response systems in India, providing not only medical emergency response but also police and fire services under one roof. Its state-of-the-art campus houses sophisticated call centers, medical personnel who provide telephone guidance to emergency responders in the field, support staff along with research and training facilities.

A public - private initiative driven in association with the Government of Andhra Pradesh, the organization has 802 hospitals in its network committed to free, short term emergency care. To avail the service, the 108 number has to be dialed and the right services are delivered in the least possible time. Today the Foundation runs services in 10 states in India covering a population of about 260 million.

Mahindra Satyam, the prime technology vendor, provided the design, development and deployment of state-of-art emergency management solution. The IT team evaluated and selected Voice Over IP capacity, computer telephony integration; voice loggers, interactive voice response, geographic information systems, and global positioning systems were obvious technology choices, given the need for distress communication and management. Oracle Financials, Oracle Human Capital Management, and Oracle Customer Relationship Management (CRM) were selected to provide centralized background information for providing consistent delivery and detailed patient tracking. The CRM system is used to track patients as well as hospitals to store information and uses industry best practices across the delivery chain.

The IT systems have been the key to consistent and speedy healthcare delivery services through 1-0-8 calls. The Key Performance Indicators and parameters are tracked for sensing, reaching and caring of the 1-0-8 calls. Data driven information from IT system provides record of lives saved, agility of 1-0-8 system and information of outcomes on individual patients. One of the key points is the IT system design for scalability; what started as services in four towns per month expanded dramatically to cover the entire state in less than a year. Today the Foundation runs services in 10 states of India covering a population of about 260 million.

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Point of View

The awareness of 1-0-8 was 40 percent in 2007 and is said to reach 100 percent in 2010 which will lead to 1 million calls per day.

The Foundation received the "Computerworld Honors 21st Century Achievement Award" under the category "Healthcare" in June 2008 for its emergency response system in India based on the solution provided by Mahindra Satyam.

Taking Grassroot Innovations, globally

Healthcare reform is on top of the agenda for the present US government. Healthcare expenditure is more than 2 trillion USD i.e., 20% of GDP. However at the same time healthcare services are not reaching the entire population primarily because of high cost of healthcare delivery and accessibility at all geographical locations.

The \$787-billion American Recovery and Reinvestment Act (ARRA) in February 2009 increased the focus on leveraging healthcare technology to reduce the healthcare delivery cost and plans to invest \$ 9.5 - \$ 12.5 billion on health information technology (HIT). The grants will be provided to encourage medical institutions to use electronic health records and healthcare exchanges to reduce cost. Leading healthcare analysts also predict increased investments in technology in the areas for broadband utilization, e.g. "tele-health" or telemedicine for healthcare organizations. Leading analyst organizations predict healthcare market to spend \$28.4 billion on IT in 2009 and the figure is expected to grow to \$32.7 billion by 2012.

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Mahindra Satyam's experience clearly demonstrates the success of information and communication technologies in transforming healthcare delivery and services and that too at fraction of the cost. Mahindra Satyam's experience with healthcare agencies and rural clinics and strong expertise in technology is uniquely positioned to address the healthcare needs of the US providers and health organizations.

Mahindra Satyam is also buttressed by the expertise of Tech Mahindra (parent company of Mahindra Satyam) in telecommunications field. Tech Mahindra has received multiple recognitions including the Vertical Growth Leadership in Telecom -Asia ICT Awards 2007; 2nd largest player in Telecom Software from India - Voice & Data 2008; and Ranked 12th Largest TOMS Vendor by "Market Share: Telecoms Operations Management Systems – Worldwide, 2006-2007" – April 2008) .

References

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<http://www.gereports.com/reverse-innovation-building-ges-local-growth-model/>

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